

CLAIMS

The invention claimed is

1. A bending jack for placement on a support surface below the jack to push a wooden plank positioned forward of the jack, comprising:
 - a handle having a first end portion for grasping by a user and a second end portion;
 - a spur bar having a first end portion and a second end portion, the second end portion of the spur bar being pivotally attached to the second end portion of the handle;
 - a spur fixedly attached to the first end portion of the spur bar at a forward position spaced away from the pivotal attachment of the second end portion of the spur bar to the second end portion of the handle, the spur projecting in a downward first direction from the spur bar for engagement with the support surface;
 - a spur head member fixedly attached to the first end portion of the spur bar and projecting in an upward second direction from the spur bar, the spur head member having a spur head portion positioned above and away from the spur bar for applying a downward driving force thereto to drive the spur into engagement with the support surface;
 - a push arm having a first end portion and a second end portion, the second end portion of the push arm being pivotally attached to the second end portion of the handle and the first end portion being positioned forward of the spur, a portion of the push arm adjacent to the spur head member being positioned below the spur head portion such that the spur head portion can be engaged for driving the spur into engagement with the support surface without interference by the push arm; and
 - a push head fixedly and rigidly attached to the first end portion of the push arm and being positioned forward of the spur for engaging and pushing on the wooden plank.

2. The bending jack of claim 1 wherein the push arm and push head are of one-piece construction.

3. The bending jack of claim 1 further including a first stop fixedly attached to the spur head member above the push arm and positioned to engage and limit upward travel of the push arm relative to the spur bar.

4. The bending jack of claim 3 further including a second stop fixedly attached to the spur bar below the push arm and positioned to engage and limit downward travel of the push arm relative to the spur bar.

5. The bending jack of claim 1 wherein the push arm includes elongated spaced apart first and second push arm members defining a space therebetween, the first and second push arm members each having a first end portion and a second end portion, the second end portion of both of the first and second push arm members being pivotally attached to the second end portion of the handle, the push head spanning between and being fixedly and rigidly attached to the first end portions of both of the first and second push arm members.

6. The bending jack of claim 5 wherein the spur bar is positioned at least partially in the space between the first and second push arm members to guide and limit lateral movement of the spur bar.

7. The bending jack of claim 6 further including a first stop fixedly attached to the spur head member above and in position to engage at least one of the first and second push arm members and thereby limit upward travel of the first and second push arm members relative to the spur bar.

8. The bending jack of claim 7 further including a second stop fixedly attached to the spur bar below and in position to engage at least one of the first and second push arm members and thereby limit downward travel of the first and second push arm members relative to the spur bar.

9. The bending jack of claim 5 wherein the first and second push arm members and the push head are of one-piece construction.

10. The bending jack of claim 1 further including a cam lock member having an aperture, the push arm projecting through the aperture of the cam lock member and the cam lock member being selectively slidable along the push arm for movement of the cam lock member to a selected lock position along the push arm, the cam lock member being sized and positioned such that when in the selected lock position the cam lock member engages the forward end portion of the spur bar, the aperture of the cam lock member being sufficiently larger than the push arm to permit the cam lock member to be selectively rocked forward and rearward on the push arm to be move into and out of a locked condition, when in the locked condition and in the selected lock position the cam lock member prevents rearward movement of the push arm relative to the spur bar.

11. The bending jack of claim 10 wherein the cam lock member includes a flange attached thereto and projecting rearward in position to engage the forward end portion of the spur bar to apply a rocking force to the cam lock member and thereby maintain the cam lock member rocked on the push arm in the locked condition.

12. The bending jack of claim 10 wherein the cam lock member includes a lock edge defining an inward edge portion of the aperture of the cam lock member positioned to engage and grip the push bar when the cam lock member is

rocked into the locked condition and thereby prevent rearward movement of the push bar relative to the spur bar.

13. A bending jack for placement against a support member to push a wooden plank, comprising:

- a handle having a first end portion and a second end portion;

- a spur arm having a first end portion and a second end portion, the second end portion of the spur arm being pivotally attached to the second end portion of the handle;

- a spur attached to the first end portion of the spur arm and projecting in a first direction from the spur arm on a side of the spur arm toward the support member when the jack is in use for engagement with the support member;

- a push arm having a first end portion and a second end portion, the second end portion of the push arm being pivotally attached to the second end portion of the handle and the first end portion of the push arm being positioned for pushing engagement with the wooden plank when the jack is in use; and

- a spur head member having a first end portion and a second end portion, the first end portion of the spur head member being attached to the first end portion of the spur arm, the spur head member projecting in a second direction from the spur arm on a side of the spur arm away from the support member when the jack is in use and beyond the push arm and terminating in the second end portion of the spur head member being positioned on a side of the push arm opposite the support member when the jack is in use and spaced away from the push arm for unobstructed application of a force to the second end portion of the spur head member to drive the spur into engagement with the support member without interference by the push arm.

14. The bending jack of claim 13 for use with a hammer to drive the spur into engagement with the support member, wherein the second end portion of the

spur head member has a spur head portion adapted for striking with the hammer from a position in the second direction spaced away from the spur head portion.

15. The bending jack of claim 13 wherein the first end portion of the push arm has a push head portion attached thereto positioned beyond the first end portion of the spur arm so as to be spaced away from the spur in a direction toward the wooden plank for pushing engagement with the wooden plank when the jack is in use.

16. The bending jack of claim 15 wherein the push arm includes an elongated arm portion extending between the first and second end portions of the push arm, and the arm portion and push head portion are of one-piece construction.

17. The bending jack of claim 15 wherein the push arm includes an elongated arm portion extending between the first and second end portions of the push arm, and the push head portion is rigidly supported by the arm portion to prevent movement of the push head portion relative to the arm portion when the jack is in use.

18. The bending jack of claim 13 wherein the push arm includes elongated spaced apart first and second push arm members defining a space therebetween, the first and second push arm members each having a first end portion and a second end portion, the second end portion of both of the first and second push arm members being pivotally attached to the second end portion of the handle, and wherein the first end portions of the first and second push arm members have a push head member spanning therebetween and positioned for pushing engagement with the wooden plank when the jack is in use.

19. The bending jack of claim 18 wherein the push head member is rigidly attached to the first end portions of both of the first and second push arm members.

20. The bending jack of claim 19 wherein the first and second push arm members and the push head member are of one-piece construction.

21. The bending jack of claim 18 wherein the spur arm is positioned at least partially within the space between the first and second push arm members, the first and second push arm members being arranged to guide and limit lateral movement of the spur arm when the jack is in use.

22. The bending jack of claim 18 further including a first stop in a position to engage at least one of the first and second push arm members and thereby limit travel of the first and second push arm members in the second direction from the spur arm prior to when the jack is in use.

23. The bending jack of claim 22 further including a second stop in a position to engage at least one of the first and second push arm members and thereby limit travel of the first and second push arm members in the first direction from the spur arm prior to when the jack is in use.

24. The bending jack of claim 13 further including a first stop in a position to engage the push arm and thereby limit travel thereof in the second direction from the spur arm prior to when the jack is in use.

25. The bending jack of claim 24 further including a second stop in a position to engage the push arm and thereby limit travel thereof in the first direction from the spur arm prior to when the jack is in use.

26. The bending jack of claim 13 further including a lock member slidably attached to the push arm for slidable adjusting movement between the first end portion of the spur arm and the first end portion of the push arm, the lock member being

selectively slidable along the push arm to a selected lock position along the push arm, the lock member being sized and positioned to engage the first end portion of the spur arm when in the selected lock position, the lock member being selectively rotatable on the push arm into a locked condition with the lock member in locking engagement with the push arm to prevent further sliding movement of the lock member toward the first end portion of the push arm and thereby prevent relative movement of the first end portion of the push arm toward the first end portion of the spur arm.

27. The bending jack of claim 26 wherein the lock member has an aperture and the push arm projects through the aperture to permit the lock member to be selectively slidable along the push arm, the aperture being sufficiently large to permit the lock member to be selectively rotated in opposing directions on the push arm and thereby moved into and out of the locked condition.

28. The bending jack of claim 26 wherein the lock member is selectively rotatable on the push arm into the locked condition about an axis transverse to the push arm.

29. The bending jack of claim 26 wherein the lock member includes a flange attached thereto and projecting toward the first end portion of the spur arm to apply a rotational force to the lock member to maintain the lock member rotated on the push arm in the locked condition.

30. A bending jack for placement against a support member to push a wooden plank, comprising:
a handle having a first end portion and a second end portion and arranged for rotation through a central plane;

a spur arm having a first end portion and a second end portion, the second end portion of the spur arm being pivotally attached to the second end portion of the handle for rotation through the central plane;

a spur located in the central plane and attached to the first end portion of the spur arm and projecting in a first direction in the central plane from the spur arm on a side of the spur arm toward the support member when the jack is in use for engagement with the support member;

a push arm having a first end portion and a second end portion, the second end portion of the push arm being pivotally attached to the second end portion of the handle for rotation through the central plane, the first end portion of the push arm being positioned for pushing engagement with the wooden plank when the jack is in use with a wooden plank arranged transverse to the central plane to apply a substantially balance pushing force on the portions of the wooden plank to each side of the central plane; and

a spur head member located in the central plane and having a first end portion and a second end portion, the first end portion of the spur head member being attached to the first end portion of the spur arm, the spur head member projecting in a second direction in the central plane from the spur arm on a side of the spur arm away from the support member when the jack is in use and beyond the push arm and terminating in the second end portion of the spur head member being positioned in the central plane on a side of the push arm opposite the support member when the jack is in use and spaced away from the push arm for unobstructed application of a force generally in the central plane to the second end portion of the spur head member to drive the spur into engagement with the support member without interference by the push arm.

31. The bending jack of claim 30 wherein the push arm includes an elongated arm portion extending between the first and second end portions of the push

arm, and the push head portion is rigidly supported by the arm portion to prevent movement of the push head portion relative to the arm portion when the jack is in use.

32. The bending jack of claim 30 wherein the push arm includes elongated spaced apart first and second push arm members, each positioned to an opposite side of the central plane and defining a space therebetween coincident with the central plane, the first and second push arm members each having a first end portion and a second end portion, the second end portion of both of the first and second push arm members being pivotally attached to the second end portion of the handle and arranged for rotation through the central plane, and wherein the first end portions of the first and second push arm members have a push head member spanning therebetween and positioned for pushing engagement with the wooden plank when the jack is in use.

33. The bending jack of claim 32 wherein the spur arm extends at least partially within the space between the first and second push arm members, the first and second push arm members being arranged to limit lateral movement of the spur arm when the jack is in use.

34. The bending jack of claim 33 further including a stop in a position to engage at least one of the first and second push arm members and thereby limit rotation of the first and second push arm members through the central plane in the second direction from the spur arm prior to when the jack is in use.

35. The bending jack of claim 30 further including a stop in a position to engage the push arm and thereby limit rotation thereof through the central plane in the second direction from the spur arm prior to when the jack is in use.

36. The bending jack of claim 30 further including a lock member slidably attached to the push arm for slidable adjusting movement between the first end

portion of the spur arm and the first end portion of the push arms, the lock member being selectively slidable along the push arm to a selected lock position along the push arm, the lock member being sized and positioned to engage the first end portion of the spur arm when in the selected lock position, the lock member being selectively rotatable on the push arm into a locked condition with the lock member in locking engagement with the push arm to prevent further sliding movement of the lock member toward the first end portion of the push arm and thereby prevent relative movement of the first end portion of the push arm toward the first end portion of the spur arm.

37. The bending jack of claim 36 wherein the lock member has an aperture and the push arm projects through the aperture to permit the lock member to be selectively slidable along the push arm, the aperture being sufficiently large to permit the lock member to be selectively rotated in opposing directions on the push arm and thereby moved into and out of the locked condition.

38. The bending jack of claim 36 wherein the lock member includes a cam member attached thereto and projecting toward the first end portion of the spur arm to apply a rotational force to the lock member to maintain the lock member rotated on the push arm in the locked condition.

39. A bending jack for placement against a support member to push a wooden plank, comprising:
a handle having a first end portion and a second end portion;
an anchor arm having a first end portion and a second end portion, the second end portion of the anchor arm being pivotally attached to the second end portion of the handle;
an anchor member attached to the first end portion of the anchor arm for anchoring the jack to the support member when the jack is in use;

a push arm having a first end portion and a second end portion, the second end portion of the push arm being pivotally attached to the second end portion of the handle and the first end portion of the push arm being positioned for pushing engagement with the wooden plank when the jack is in use; and

a head member having a first end portion and a second end portion, the first end portion of the head member being attached to the first end portion of the anchor arm, the head member projecting from the anchor arm on a side of the anchor arm away from the support member when the jack is in use and beyond the push arm and terminating in the second end portion of the head member being positioned on a side of the push arm opposite the support member when the jack is in use and spaced away from the push arm for unobstructed application of a force to the second end portion of the head member to drive the anchor member into engagement with the support member without interference by the push arm.

40. The bending jack of claim 39 for use with a hammer to drive the anchor member into engagement with the support member, wherein the second end portion of the head member has a head portion adapted for striking with the hammer.

41. The bending jack of claim 39 wherein the first end portion of the push arm has a push head portion attached thereto positioned for pushing engagement with the wooden plank when the jack is in use, the push arm including an elongated arm portion extending between the first and second end portions of the push arm, the push head portion being rigidly supported by the arm portion to prevent movement of the push head portion relative to the arm portion when the jack is in use.

42. The bending jack of claim 39 wherein the push arm includes elongated spaced apart first and second push arm members defining a space therebetween, the first and second push arm members each having a first end portion and a second end portion, the second end portion of both of the first and second push

arm members being pivotally attached to the second end portion of the handle, and wherein the first end portions of the first and second push arm members have a push head member spanning therebetween and positioned for pushing engagement with the wooden plank when the jack is in use.

43. The bending jack of claim 42 wherein the anchor arm is positioned at least partially within the space between the first and second push arm members, the first and second push arm members being arranged to guide and limit lateral movement of the anchor arm when the jack is in use.

44. The bending jack of claim 39 further including a stop in a position to engage the push arm members and thereby limit travel thereof in the direction of the second end portion of the head member prior to when the jack is in use.

45. The bending jack of claim 39 further including a lock member slidably attached to the push arm for slidable adjusting movement between the first end portion of the anchor arm and the first end portion of the push arm, the lock member being selectively slidable along the push arm to a selected lock position along the push arm, the lock member being sized and positioned to engage the first end portion of the anchor arm when in the selected lock position, the lock member being selectively rotatable on the push arm into a locked condition with the lock member in locking engagement with the push arm to prevent further sliding movement of the lock member toward the first end portion of the push arm and thereby prevent relative movement of the first end portion of the push arm toward the first end portion of the anchor arm.

46. The bending jack of claim 45 wherein the lock member has an aperture and the push arm projects through the aperture to permit the lock member to be selectively slidable along the push arm, the aperture being sufficiently large to permit

the lock member to be selectively rotated in opposing directions on the push arm and thereby moved into and out of the locked condition.

47. The bending jack of claim 45 wherein the lock member includes a cam member attached thereto and projecting toward the first end portion of the anchor arm to apply a rotational force to the lock member to maintain the lock member rotated on the push arm in the locked condition.

48. A bending jack for placement against a support member to push a wooden plank, comprising:

- a handle having a first end portion and a second end portion;

- a spur arm having a first end portion and a second end portion, the second end portion of the spur arm being pivotally attached to the second end portion of the handle, the spur arm having a head portion positioned for application of a driving force thereto;

- a spur attached to the first end portion of the spur arm and projecting in a direction from the spur arm on a side of the spur arm toward the support member when the jack is in use for engagement with the support member upon application of the driving force to the head portion of the spur arm; and

- a push arm having elongated spaced apart first and second push arm members and a push head member, the first and second push arm members defining a space therebetween and each having a first end portion and a second end portion, the second end portion of both of the first and second push arm members being pivotally attached to the second end portion of the handle, the push head member spanning between the first end portions of the first and second push arm members and positioned for pushing engagement with the wooden plank when the jack is in use, the spur arm being positioned at least partially within the space between the first and second push arm members, and the first and second push arm members being arranged to guide and limit lateral movement of the spur arm when the jack is in use.

49. The bending jack of claim 48 wherein the push head member is positioned beyond the first end portion of the spur arm so as to be spaced away from the spur in a direction toward the wooden plank for pushing engagement with the wooden plank when the jack is in use.

50. The bending jack of claim 48 wherein the first and second push arm members and the push head member are of one-piece construction.

51. The bending jack of claim 48 wherein the push head member is rigidly supported by the first and second push arm members to prevent movement of the push head member relative to the first and second push arm members when the jack is in use.

52. The bending jack of claim 48 further including a first stop in a position to engage at least one of the first and second push arm members and thereby limit travel of the first and second push arm members relative to the spur arm prior to when the jack is in use.

53. The bending jack of claim 48 further including a lock member slidably attached to the push arm for slidable adjusting movement between the first end portion of the spur arm and the push head member, the lock member being selectively slidable along the push arm to a selected lock position along the push arm, the lock member being sized and positioned to engage the first end portion of the spur arm when in the selected lock position, the lock member being selectively rotatable on the push arm into a locked condition with the lock member in locking engagement with the push arm to prevent further sliding movement of the lock member toward the push head member and thereby prevent relative movement of the push head member toward the first end portion of the spur arm.

54. The bending jack of claim 53 wherein the lock member has an aperture and at least one of the first and second push arm members projects through the aperture to permit the lock member to be selectively slidable therealong, the aperture being sufficiently large to permit the lock member to be selectively rotated in opposing directions on the push arm and thereby moved into and out of the locked condition.